Learning objectives and skills

Advent		Lent		Pentecost	
5.4 We are Web Developers **Creating a website about space**	**5.1 We are Game Developers** **Developing an interactive game**	**5.2 We are Cryptographers** **cracking codes** **/Digital Citizenship**	**Digital Citizenship/** **5.3We are Artists** **Fusing Geometry and Art**	**5.6 We are Architects** **Creating a virtual space**	**5.5 We are Bloggers** **Sharing experiences and opinions**
1. Planning the website • Use advanced tools in word processing / DTP software such as tabs, appropriate text formatting, line spacing etc appropriately to create quality presentations appropriate for a known audience **2. Learning how search works** • Perform a search using different search engines and check the results against each other, explaining why they might be different. • Show an awareness of the need for accuracy in spelling and syntax to search effectively. **3. Curating website content** • Use appropriate methods to validate information and check for bias and accuracy. • Repurpose and make appropriate use of selected resources for a given audiences, acknowledging material used where appropriate • They show an understanding that not all information on the internet is accurate. **4.Adding media to the website** • Independently and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic. • Make use of copy and paste, beginning to understand the purpose of copyright regulations and the need to repurpose information for a particular audience.	**1. Planning a Game** • Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose. **2. Creating and sourcing assets** • Use images that they have sourced / captured / manipulated as part of a bigger project (eg presentation or document). **3. Creating a prototype of the game** • Independently create sequences of commands to control devices in response to sensing (i.e. use inputs as well as outputs). **4. Debugging the game script** • Engage in Logo based problem solving activities that require children to write procedures etc. and to predict, test and modify. **5. Testing the game** • Use control software to control devices (using output commands) or to simulate this on screen. Predict, test and refine their programming. **6. Writing game instructions and publishing the game** • Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose.	**1. Transmitting information in semaphore** • Show an understanding of the school network and how it links computers to resources in school and beyond. **2. Using Morse code** • Compare this with other networks they may encounter at home or in the wider world (e.g. banks) **3. Using the Caesar cipher to create and crack codes** **4.How can a secure password help you protect your private information?** • Develop a growing awareness of how to stay safe when using the internet (in school and at home) and that they abide by the school's internet safety policy. **5. How can we create a positive online community?** • Abide by school rules for e-safety. **6. What is spam and what can you do about it?** • Show an understanding of how filtering and monitoring tools affect their use of the school network and Internet and compare this with their experience of access outside school.	**1. How do I cite different types of online sources?** • Make use of copy and paste, beginning to understand the purpose of copyright regulations and the need to repurpose information for a particular audience. **2. How can photos be changed on the computer, and how can that affect our feelings about the way we look?** • They show an understanding that not all information on the internet is accurate. **3. Creating Tessellations using Inkscape** • Evaluate the tools available to them including any that are unfamiliar or new and use them to solve problems. **4. Programming Islamic-style art in Scratch** • Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose. **5. Using Inkscape to create art in the style of Bridget Riley** • Demonstrate an awareness of the appropriateness of outcomes depending on choices regarding tools and devices **6. Creating computer-generated landscapes in Terragen** • Make choices about the devices and tools they use for specific purposes and explain them in relation to the context.	**1. Exploring art galleries** **2. Creating a virtual sculpture** • Begin to show an awareness of specific tools used in working life **3. Getting started with the gallery** • Use images that they have sourced / captured / manipulated as part of a bigger project (eg presentation or document). **4. Adding furniture to the gallery** • Perform a search using different search engines and check the results against each other, explaining why they might be different. • Show an awareness of the need for accuracy in spelling and syntax to search effectively. **5. Hanging art** • Use images that they have sourced / captured / manipulated as part of a bigger project (eg presentation or document). **6. Creating a virtual tour of the gallery** • Make a short film / animation from images (still and / or moving) that they have sourced, captured or created	**1. Finding out what makes a good blog** • Develop a growing awareness of how to stay safe when using the internet (in school and at home) and that they abide by the school's internet safety policy. **2. Writing a blog post** • Share ICT work they have done electronically by email, VLE, or uploading to authorised sites. • Begin to show an awareness of specific tools used in working life. **3. Commenting on blog posts** • Where possible seek and respond to feedback. • Abide by school rules for e-safety. **4.Adding images to blog posts** • Use images that they have sourced / captured / manipulated as part of a bigger project (eg presentation or document). • Make use of copy and paste, beginning to understand the purpose of copyright regulations and the need to repurpose information for a particular audience. **5. Working with media** • Create and share more sophisticated podcasts and consider the effect that their podcasts will have on the audience. • Make use of copy and paste, beginning to understand the purpose of copyright regulations and the need to repurpose information for a particular audience. **6. Live blogging** • Use collaborative tools and e-mail showing a sensitivity for this type of remote collaboration and communication • Share ICT work they have done electronically by email, VLE, or uploading to authorised sites. • Begin to show an awareness of specific tools used in working life.

5.Reviewing and improving the website					
• Multimedia work shows restrained use of effects that help to convey meaning rather than impress. • Use collaborative tools and e-mail showing a sensitivity for this type of remote collaboration and communication **6.Publishing the website** • Where possible seek and respond to feedback. • Share ICT work they have done electronically by email, VLE, or uploading to authorised sites.					

#BTK and Links with other subjects

Science- Space		**PSHE-** Staying safe online	**Art-** creating prints/patterns		

Key Vocabulary

Hyperlink Website Search engine Syntax Bias Accuracy Internet Email	Algorithms Sprite Controls Commands Inputs/outputs Modify Debugging Scratch	Semaphore Morse code Caesar Cipher Networks Community Password Spam Filter	Cite Editing Photoshop Tessellations Inkscape Scratch Bridget Riley Terragen	Sculpture Layout Gallery Portraits Furniture Animation Search engine Aesthetically pleasing	Blog Vlog Youtubers Bloggers/vloggers Podcast Copyright E-safety Audience

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Text and Multimedia	• Use advanced tools in word processing / DTP software such as tabs, appropriate text formatting, line spacing etc appropriately to create quality presentations appropriate for a known audience • Multimedia work shows restrained use of effects that help to convey meaning rather than impress.
Digital Images (Photos, paint, animation)	• Make a short film / animation from images (still and / or moving) that they have sourced, captured or created. • Use images that they have sourced / captured / manipulated as part of a bigger project (eg presentation or document).
Sound and music (inc sound recorders)	• Create multiple track compositions that contain a variety of sounds. • Create and share more sophisticated podcasts and consider the effect that their podcasts will have on the audience.
Electronic Communication	• Share ICT work they have done electronically by email, VLE, or uploading to authorised sites. • Where possible seek and respond to feedback. • Abide by school rules for e-safety.
Research and E Safety	• Make use of copy and paste, beginning to understand the purpose of copyright regulations and the need to repurpose information for a particular audience. • They show an understanding that not all information on the internet is accurate.

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	• Develop a growing awareness of how to stay safe when using the internet (in school and at home) and that they abide by the school's internet safety policy. • Independently and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic. • Use appropriate methods to validate information and check for bias and accuracy. • Repurpose and make appropriate use of selected resources for a given audiences, acknowledging material used where appropriate
Control (algorithms)	• Engage in Logo based problem solving activities that require children to write procedures etc. and to predict, test and modify. • Use control software to control devices (using output commands) or to simulate this on screen. Predict, test and refine their programming. • Independently create sequences of commands to control devices in response to sensing (i.e. use inputs as well as outputs). • Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose.
Handling information (databases and graphs)	• Children work as a class or group to create a data collection sheet and use it to setup a straight forward database to answer questions. • Enter information and interrogate it (by searching, sorting, graphing etc). • Begin to reflect on how useful the collected data and their interrogation was and whether or not their questions were answered. • Independently solve a problem by planning and carrying out data collection, by organising and analysing data involving complex searches using a database, and by drawing conclusions and presenting findings. • The need for accuracy is demonstrated and strategies for spotting implausible data are evident. • Children should be able to talk about issues relating to data protection and the need for data security in the world at large (eg health, police databases).
Modelling and simulations (spreadsheets, adventure games and simulations)	• Set up and use a spreadsheet model to explore patterns and relationships and make predictions. • Know how to enter simple formulae to assist this process. • Set up and use their own spreadsheet, which contains formulae to investigate mathematical models. Ask "what if …" questions and change variable in their model. • Understand the need for accuracy when creating formulae and check regularly for mistakes, by questioning results. • Relate their use of spreadsheets to model situations to the wider world.
Data logging (science and maths)	• Use a data logger confidently, connected to the computer or remotely, to capture continuous or intermittent data readings. • Interpret the results and use these in their investigations. • Realise the advantages of using ICT to collect data that might otherwise be problematic. • Children are able to identify their own opportunities for data logging and carry out their own experiments. • They check and question results and are able to spot trends in data and identify when problems may have occurred.
Understanding Technologies (individual technologies)	• Make choices about the devices and tools they use for specific purposes and explain them in relation to the context. • Begin to show an awareness of specific tools used in working life • Evaluate the tools available to them including any that are unfamiliar or new and use them to solve problems. • Demonstrate an awareness of the appropriateness of outcomes depending on choices regarding tools and devices.
Understanding Technologies (networks)	• Show an understanding of the school network and how it links computers to resources in school and beyond. • Compare this with other networks they may encounter at home or in the wider world (e.g. banks) • Show an understanding of how filtering and monitoring tools affect their use of the school network and Internet and compare this with their experience of access outside school.
Understanding Technologies (the internet)	• Perform a search using different search engines and check the results against each other, explaining why they might be different. • Show an awareness of the need for accuracy in spelling and syntax to search effectively. • Use collaborative tools and e-mail showing a sensitivity for this type of remote collaboration and communication